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**(54) CUBIC BORON NITRIDE BASE SUPERHIGH PRESSURE SINTERED MATERIAL
EXCELLENT IN WEAR RESISTANCE**

(57)Abstract:

PURPOSE: To improve wear resistance, machining performance and the life by compounding and dispersing an aluminum oxide between a specified binding phase forming element and dispersion phase forming element in a special condition.

CONSTITUTION: 20-40vol.% more than one kind among carbide, nitride and carbonitride of Ti, Zr and Hf as the binding phase forming element, 6-40vol.% aluminum oxide and remainder cubic boron nitride(CBN) having 1-10 μ m average grain size as the dispersion phase forming element, moreover, Al (OH)3 powder are prepared. The CBN powder and the Al(OH)3 powder are stirred and mixed in NH4OH soln. and dried to obtain Al2O3-surrounding CBN powder. Then, the powdery materials of these compound composition are compounded, mixed in a grinding mill, dried and pressed, and kept at 4-5GPa and 1300-1500°C for 30min in a superhigh temp. and pressure device, and the CBN base superhigh pressure sintered body having the structure in which 1-20vol.% of aluminum oxide forms continuous or intermittent surrounding layer on the surface part of CBN particles and remainder is dispersed in the binding phase is obtained.

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